High-Ability: Improving education for gifted and talented students in the inclusive classroom.

An Honors Thesis (HONRS 499)

By

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Abstract

Current education legislation is demanding higher accountability for student achievement. The measures effected to help achieve this goal have created a school climate, which is focused on the lowest achieving third of students. As teachers and schools concentrate their energy on raising the achievement level of these students, gifted and talented students are receiving less academic support and are underachieving in relation to their academic potential. Because these students are the future world leaders in a variety of fields, fully developing their talent is a necessity for the future prosperity of humanity. *High-Ability: Improving education for gifted and talented students in the inclusive classroom* is a professional development curriculum designed to raise awareness for the needs of high ability students and to equip in-service teachers with research based practice for high ability students. The curriculum includes an anticipation guide, a PowerPoint presentation, and a presenter's script. Throughout the professional development program teachers will consider insight from researchers and high ability students themselves, collaborate with other teachers in applying the content to their classrooms, and explore the big picture for why this problem exists and how to combat it.

Acknowledgements:

I would like to thank Mrs. Stacey Allred, whose guidance in this project challenged my thinking and developed my skill set. Her professionalism, passion, and expertise has been a model and inspiration since first being a student of hers in EDEL 300.

I would also like to thank my fellow pre-service teacher friends Sam, Theresa, and Evie who have been a sounding board in the development of my ideas throughout the project.

Finally, I would like to thank Nathan, who supported and encouraged me to persevere in developing the project to the best of my ability.

Author's Statement:

My goal for this project was to prepare tools that I can use as a professional educator to help more children achieve at his or her highest ability level. I created a brief professional development session curriculum to help in-service teachers improve their differentiation for high ability students. At the beginning of this project, I was aware that something was amiss in the education of high ability students, because I saw gifted and talented programs disappearing and discussions of closing the achievement gap appearing. Through my research, I began to understand the complex reasoning behind this phenomenon. Encouraged to find other researchers and educators, who are passionately pursuing talent development in these students, I had to balance the opinions of those on both sides of the issue in order to design a politically neutral curriculum focused on the needs of students. The content of the program needed to easily translate into practical application, so I researched many ideas for differentiating instruction. As a result, this educational buzzword was animated with examples of differentiation across the curriculum and in a wide variety of settings. Having only received training in differentiating instruction to meet the needs of the lowest third of the class, this research equipped me to adapt instruction to meet the learning needs of every student. This development is especially important, because as an educator it is my responsibility to aid in the highest academic achievement in all students. Although my vision for educating gifted students began in high school, the research from this project equipped me to carry out that vision well. Rather than seeing students in categories that define them, I see students on a spectrum of ability, learning style, and areas of academic strength and weaknesses. My prior vision of accommodating groups of students was dependent on them being categorized into groups. Having discovered the complex variations among gifted students, I realized that any grouping of students for instruction must always be fluid and flexible, because the students are not defined by the groupings they may or may not fit into. While synthesizing research for this professional development curriculum, as many questions and challenges for future growth as an educator of high ability students arose as did answers and solutions. The development of this curriculum is a first step in supporting high ability students, but much still lies ahead in advocating for this group of students who are so underrepresented in current education legislation and dialogue.

Anticipation Guide

T / F Schools generally are satisfied to have students work at grade level.

T / F Gifted students don't need my help; they can learn on their own.

T / F Teachers generally are more willing to notice differences in slower learners.

T / F Most teachers are adequately trained to work with gifted students.

T / F The best way to organize students into classrooms is by their age.

T / F It is important to teach to each student's learning ability.

T / F All children can learn the same things, at the same pace, and to the same level.

T / F An inclusive classroom is good for all students' achievement levels.

T / F Students can achieve at the same levels if given the same opportunities.

High-Ability:

Improving education for gifted and talented students in the inclusive classroom.

Awareness

Which Students in My Classroom Are Gifted and Talented?

- Performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one domain when compared to other students of the same age, experience, or environment; and:
- Is characterized by exceptional gifts, talents, motivation, or interests

What Gifted Students Think It Means to Be Gifted:

- "Being gifted means being able to comprehend and do things the average person does not know how to do or does not want to know how to do. Being gifted also means having to do harder, more advanced work. To be frank and simple, being gifted is when you're more intelligent than most." –Girl, 10, Michigan
- "I think being gifted means having a special gift from God. I feel that if you are gifted, you are on earth to fulfill a need that (maybe) other people can't fulfill." Girl, 12, Arkansas
- "A gifted child is one who will explore new things, a child who will seek to find answers and won't give up too easily." –Girl, 12, Georgia

Activity

- In your class, who do you think might be gifted and talented?
- Collaborate with other teachers in your grade level.
- Share what ideas you already have or are implementing to meet these students' needs.
- 2 minutes

Bright Learners vs. Gifted Learners

Bright Child	Gifted Learner
Knows the answers.	Asks the questions.
Is interested.	Is highly curious.
Is attentive.	Is mentally and physically involved.
Answers the questions.	Discusses in detail, elaborates.
Top group.	Beyond the group.
Listens with interest.	Shows strong feelings and opinions.
Learns with ease.	Already knows.
6-8 repetitions for mastery.	1-2 repetitions for mastery.
Understands ideas.	Constructs abstractions.
Enjoys peers.	Prefers adults.
Grasps the meaning.	Draws inferences.
Completes assignments	Initiates projects.
Is receptive.	Is intense.
Copies accurately.	Creates a new design.
Enjoys school.	Enjoys learning.
Absorbs information.	Manipulates information.
Technician.	Inventor.
Good memorizer.	Good guesser.
Enjoys straightforward, sequential presentation.	Thrives on complexity.
Is alert.	Is keenly observant.
Is pleased with own learning.	Is highly self-critical

What Are Gifted and Talented Student Like?

- Intense concentration and attention span
- Perfectionism
- Issues with authority
- Empathy and compassion
- Idealism
- Sense of humor
- Difficulties with friendships
- Bossiness
- Competitive
- Androgynous behavior

How Do Gifted Students Think They Are the Same as/Different than their peers?

- "I enjoy playing the same games as my classmates, but I also enjoy doing harder work than my friends. Also, I'm different because I love homework." –Girl, 7, Louisiana
- "I'm the same because I get into trouble for talking and I like to go to lunch and visit. I'm different because I don't like recess —I'd rather be working on a project." –Boy, 9, Arkansas

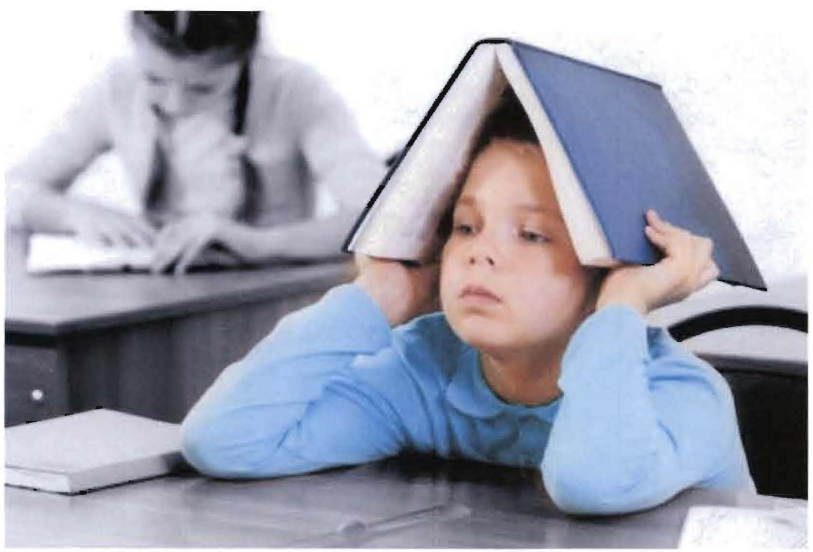
Issues for Gifted Students in School

Discussion

- What do you think school is like for gifted and talented students?
- What do you think is their ideal day at school?
- What factors do you think might affect their academic achievement?

What do you do on a typical school day?

"Most of the time it's just review, review, review." – Girl, 10, Maine



1. Sleep through reading.
2. Learn in my gifted program.
3. Read through health.
4. Look interested through math.
5. Pretend to take notes through social studies.
6. Throw up during lunch.

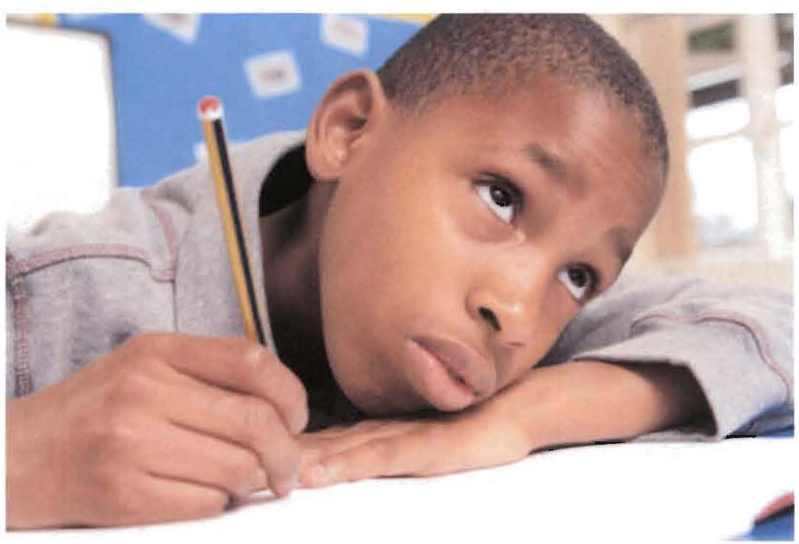
What makes learning more difficult or less interesting?

"My math teacher expects me to know how to do very hard problems and won't explain them to me." –Girl, 11, Georgia

"I'm not saying that everything should be a production, but teachers should put something of themselves into their lessons." –Girl, 11, Michigan

Do you ever get bored?

"School is Never, I repeat NEVER, EVER boring! It's almost a SIN to say school is boring!" –Girl, 10, Illinois



"I think school work (like writing words five times and putting them into sentences) is as boring as something can be—if you know how to do it already." –Boy, 10, Kansas

What do you do when you're bored in school?

- Fiddle with my pencil
- Sing to myself
- Get a bathroom pass
- Imagine things
- Re-watch a TV show in my head
- Joke with people around me
- Write
- Read
- Tap my feet
- Doodle
- "I read a book or try to look interested. (I want to be an actress when I grow up, so this is good practice." –Girl, 12, New York

Issues

- Boredom
- Noncompliance
- Not showing enough effort
- Not paying attention
- Achievement gap

Reflection

Do you see your students struggling with any of these issues? Which ones?

Why Do These Issues Exist?

Discussion

- What barriers have you experienced in attempting to individualize education?
- What students in your class do you pay the most attention to? Why?
- Why do you think we offer periodic pullout instruction for lower ability students, but not to higher ability students? Should we offer that type of instruction to higher ability students?

Barriers

- Classroom division by age
- Accountability legislation
- Unavailable curriculum
- Lack of training
- Funding and legislation

How Can We Better Serve Gifted and Talented Students?

Ideas for Acceleration

- Spelling tests: Students with 90% or higher on a pre-test work together to collect 10 new words from their textbooks, study the words together, and give each other a test over those words at the end of the week.
- Use curriculum materials from a variety of grade levels.
- "Talented students from accelerated classes outperform non-accelerates of the same age and IQ by almost one full year on achievement tests."
  - Kulik, J. A. (1992). An analysis of the research on ability grouping: Historical and contemporary perspectives (RBDM 9204). Storrs: University of Connecticut, the National Research Center on the Gifted and Talented. http://www.gifted.uconn.edu/nrcgt/kulik.html

Ideas for Enrichment

- "Researchers have found that elementary teachers can eliminate from 24 to 70% of high-ability students' curriculum by compacting without any negative affect on test scores or performance."
  - Reis, S. M., & Purcell, J. H. (1993) An analysis of content elimination and strategies used by elementary classroom teachers in the curriculum compacting process. *Journal for the Education of the Gifted*, 16(2), 147-170.
- When classroom teachers eliminated between 40-50% of the previously mastered regular curriculum for high-ability students, no differences were found between students whose work was compacted and students who did all the work in reading, math computation, social studies, and spelling.
  - Reis, S. M., Westberg, K. L., Kulikowich, J. M., & Purcell, J. H. (1998). Curriculum compacting and achievement test scores: What does the research say? *Gifted Child Quarterly*, 42, 123-129.

Like ability grouping

- "Bright, average, and struggling students all benefit from being grouped with others in their ability/instructional groups when the curriculum is adjusted to the aptitude levels of the group."
  - Kulik, J. A. (1992). An analysis of the research on ability grouping: Historical and contemporary perspectives (RBDM 9204). Storrs: University of Connecticut, the National Research Center on the Gifted and Talented.
- "Within-class grouping and regrouping for specific instruction options produce substantial academic gains provided the instruction is differentiated."
  - Rogers, K. B. (1991). The relationship of grouping practices to the education of the gifted and talented learner (RBDM 9102). Storrs: University of Connecticut, the National Research Center on the Gifted and Talented.

Describe your perfect school day.

"A perfect school day would be that it would be science day. We would study space, magnets, and computers." –Boy, 10, New York

"For a perfect day, all of the kids would be at school; the work would be challenging but fun; the lunch line would be short. At the end of the day I'd have no homework and the bus wouldn't be noisy." –Girl, 10, Michigan

What makes learning interesting and fun?

- Hands-on activities
- Brainstorming
- Writing stories
- Solving serious problems like how to make a town more hospitable
- Field trips
- Listen to recordings
- Watch a movie
- Experiments
- Reading and math games
- Research
- Drawing
- Classroom discussions
- Guest speakers
- Projects like voting on bills, having sales, or acting out a news report
- Unusual topics like archeology, calligraphy, or woodworking

Unit Matrix

Around the World	Basic Thinking			Abstract Thinking		
	Knowledge	Comprehension	Application	Analysis	Creative Thinking	Critical Thinking
1. Geography a. Mexico, Brazil, Egypt, Italy, China, Australia b. map skills c. landforms d. important places and landmarks	1a. List important cities, landforms, and landmarks and demonstrate understanding through a labeled map. (SS.2.3.1, SS.2.3.2, SS.2.3.4, SS.2.3.5)	2a. Describe how landforms effect daily life in a country and demonstrate understanding through a small group discussion. (SS.2.3.3, LA.2.7.9)	3a. Classify the landmarks found in the six countries and demonstrate understanding through a table. (MA.2.1.12)	4a. Compare and contrast the landforms and important places in two countries and demonstrate understanding through a venn diagram. (SS.2.3.3, MA.2.1.12)	5a. Imagine you are inventing a new country using what we learned from the countries studied; create a map and description of your new country. (SS.2.3.4, LA.2.5.6, LA.2.5.5)	6a. Decide which country you would prefer to visit or live in and explain why through a persuasive speech. (LA.2.7.5, LA.2.7.6)
2. Culture a. daily life b. language c. music d. food e. holidays	7a. Restate words, foods, and holidays that we have in the US that originate in a country studied and demonstrate proficiency through a class discussion. (SS.2.1.2, SS.2.1.4, SS.2.2.4, SC.2.4.8, LA.2.2.5)	8a. Explain ways that a country is the same as our state and different from our state and demonstrate proficiency through a journal entry. (SS.2.1.2, SS.2.1.4, SS.2.3.3, SS.2.4.2, LA.2.5.1)	9a. Collect recipes from each country and bring one from home to share in a class recipe book. (SS.2.1.4)	10a. Contrast daily life in a chosen country with life at home by writing a friendly letter to a friend describing your visit to that country. (SS.2.1.2, LA.2.5.3)	11a. Generate an invitation to visit your favorite country and share ideas through a brochure. (SS.2.3.3, SS.2.1.7, SS.2.3.5, LA.2.5.2, LA.2.5.5, LA.2.5.6)	12a. Decide which aspects of a culture you wish to borrow and add to our local culture and demonstrate understanding through a magazine advertisement. (SS.2.1.4)
3. Traits a. inventions/ firsts b. wildlife c. folktales d. history	13a. Retell a folktale from any of the countries and demonstrate understanding through a demonstration, puppet show. (LA.2.7.8, LA.2.7.6)	14a. Express the layers of the rainforest and the animals that live there and demonstrate proficiency through a labeled diagram. (SC.2.4.1, SC.2.4.2, SC.2.4.4)	15a. Organize the inventions/firsts you choose as most important and demonstrate proficiency through a table. (SS.2.1.2, SS.2.1.4, MA.2.1.12)	16a. Compare and contrast the Aztecs and Maya from North America with ancient Egypt in Africa and demonstrate proficiency through a venn diagram. (SS.2.1.2, MA.2.1.12)	17a. Adapt a folktale from one country to reflect aspects of a second country including wildlife and landforms of new country. (LA.2.7.8, LA.2.7.10, LA.2.7.6) b. Generate a story for one of the countries using landmarks and aspects of the culture and share ideas using a folk tale. (LA.2.7.8, LA.2.7.10, LA.2.7.6)	18a. Determine the significance of three inventions/firsts from one country you think had the most impact on you and your family and demonstrate understanding through a letter to the editor. (SS.2.1.2, SS.2.1.4, LA.2.5.3)

See more examples at:
http://www.curriculumproject.com/cgi-bin/tcp_verify.cgi?agency=Indiana+Department+of+Education&href=www.doe.in.gov/&logo=indi.gif&titletext=&uw=true&sw=false&app=uw

Differentiating Math Instruction

- Problem solving
- Real world and interdisciplinary applications
- Estimation
- Mental Math

Differentiating Language Arts Instruction

- Daily 5
- Discussion groups
- Publishing (ex. Young Authors)

Differentiating Social Studies Instruction

- Interviews
- Role play
- Field trips
- Guest speakers

Differentiating Science Instruction

- Experiments
- Guest Speakers
- Authentic Questions and Hypotheses
- Brainstorming

Extra Curricular Activities

- 4-H
- Summer Talent Search Programs
- Math Bowl
- Spell Bowl
- Student Council
- Talent Shows

Other Helpful Resources

- National Association of Gifted Children's "Resources for teachers." http://www.nagc.org/index.aspx?id=652
- http://www.exquisite-minds.com/
- Everyday Mysteries: Science facts from the Library of Congress http://www.loc.gov/rr/scitech/mysteries/archive.html
- http://www.exploratorium.edu/explore
- http://www.sciencenewsforkids.org

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Parker, J. P. (1989). *Instructional strategies for teaching the gifted.* Needham Heights, MA: Allyn and Bacon.

Ruf, D. L. (2005). *Losing our minds: Gifted children left behind.* Scottsdale, AZ: Great Potential Press.

VanTassel-Baska, J. (1994). *Comprehensive curriculum for gifted learners.* Boston: Allyn and Bacon.

Yun Dai, D. (2010). *The nature and nurture of giftedness: The new framework for understanding gifted education.* New York: Teachers College Press.

High-Ability Presentation Script

Introduction Activity:

Think, Pair, Share: Consider what you already know about educating high ability students in your classroom. What modifications do you currently make for these students? How would you evaluate the success of those modifications? Do you have any ideas for modifications for high ability students that you haven't done, but would like to try? Find a partner and share your thoughts on these questions. When you are finished discussing, you can share your thoughts with the large group.

Awareness:

Which students in my classroom are gifted and talented?

Indiana DOE defines gifted and talented students like this:

- Performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one domain when compared to other students of the same age, experience, or environment; and:
- Is characterized by exceptional gifts, talents, motivation, or interests

Although "gifted" typically refers to students with strong academic abilities, and "talented" typically refers to students with strong arts abilities. "In at least one domain" refers to the idea that gifted students are not necessarily gifted in every school subject. (Not all students can learn the same things, at the same pace or to the same level.)

What gifted students think it means to be gifted:

"Being gifted means being able to comprehend and do things the average person does not know how to do or does not want to know how to do. Being gifted also means having to do harder, more advanced work. To be frank and simple, being gifted is when you're more intelligent than most." –Girl, 10 Michigan
"I think being gifted means having a special gift from God. I feel that if you are gifted, you are on earth to fulfill a need that (maybe) other people can't fulfill." Girl, 12 Arkansas
"A gifted child is one who will explore new things, a child who will seek to find answers and won't give up too easily." –Girl, 12 Georgia
(This shows that not all students can achieve at the same levels if given the same opportunities.)

Activity:

Look over your class list. Take about 2 minutes to brainstorm a quick list of students in your class who you think might be gifted and talented. When you finish, use any extra time to share your ideas with the other teachers in your grade level.

Bright Learners vs. Gifted Learners

It can be difficult to spot gifted students when just looking at assessment scores. This table highlights some of the characteristics to consider to distinguish a bright student from a gifted one.

- A bright child knows the answers; a gifted child asks the questions.
- A bright child answers the questions; a gifted child elaborates.
- A bright child needs 6-8 repetitions for mastery; a gifted child needs 1 or 2.
- A bright child is a good memorizer; a gifted child is a good guesser.

Revisit your list using the chart. How many characteristics from each side of the chart does the student you are considering have? Take about 3 minutes.

What are gifted and talented students like?

Not all students display these characteristics. Each child is different. These are simply characteristics that are frequently seen among gifted and talented children.

- *Intense concentration and attention span*: They may be so engrossed in their individual work that they don't seem to hear you when you try to gain their attention. They may be offended when you distract them from what they are working on.
- *Perfectionism*: after so much positive feedback, they worry about the potential of receiving negative feedback. They set very high goals for themselves.
- *Issues with authority*: they are making rational decisions about circumstances and look for authority figures to reinforce those decisions. When they don't, they may view the authority as unfair.
- *Empathy and Compassion*: sensitive to environments, situations and feelings
- *Idealism*: They have a strong sense of justice and stand up for what they believe in.
- *Sense of Humor:* more advanced, subtle, and mature
- *Friendships*: May find it difficult to develop close friendships because of not sharing similar interests.
- *Bossiness*: They have ideas for rules and game changes to make play more interesting.
- *Competitive:*
- *Androgynous behaviors*: Do not necessarily conform to gender norm based interests

How do gifted students think are they the same/different than their peers?

Throughout the presentation, I will be sharing quotes from gifted students.
"I enjoy playing the same games as my classmates, but I also enjoy doing harder work than my friends. Also, I'm different because I love homework." –Girl, 7, Louisiana
"I'm the same because I get into trouble for talking and I like to go to lunch and visit. I'm different because I don't like recess—I'd rather be working on a project." –Boy, 9, Arkansas

Issues for Gifted Students in School

Discussion:

Based on what you know about these students:
- What do you think school is like for them?
- What do you think is their ideal day at school?
- What factors do you think might affect their academic achievement?

Conversations with Gifted students about School

What do you do on a typical school day?

"Most of the time it's just review, review, review." –Girl, 10, Maine
"1. Sleep through reading.
2. Learn in my gifted program.
3. Read through health.
4. Look interested through math.
5. Pretend to take notes through social studies.
6. Throw up during lunch." –Girl, 12, New York
(These students are not being challenged beyond grade level. In their environment, achieving at grade level is good enough.)

What makes learning more difficult or less interesting?

"My math teacher expects me to know how to do very hard problems and won't explain them to me." –Girl, 11, Georgia
"I'm not saying that everything should be a production, but teachers should put something of themselves into their lessons." –Girl, 11, Michigan

Do you ever get bored?

"School is Never, I repeat NEVER, EVER boring! It's almost a SIN to say school is boring!" –Girl, 10, Illinois
"I think school work (like writing words five times and putting them into sentences) is as boring as something can be—if you know how to do it already." –Boy, 10, Kansas

What do you do when you're bored in school?

- Fiddle with my pencil
- Sing to myself
- Get a bathroom pass
- Imagine things
- Re-watch a TV show in my head

- Joke with people around me
- Write
- Read
- Tap my feet
- Doodle
- "I read a book or try to look interested. (I want to be an actress when I grow up, so this is good practice." –Girl, 12, New York

Issues

- *Boredom*: Lots of students are bored in school, but why do these highly motivated students get bored in school? (too much repetition, not enough depth, monotonous ways of showing what they know) (To avoid this issue, each students needs to be taught appropriate to their ability level.)
- *Noncompliance*: Not turning in homework (this may happen because they view the assignment as unreasonable, uninteresting, or not worth their time)
- *Not showing enough effort*: like any student they show effort mostly only toward what interests them. Repetitive work is typically not as interesting.
- *Not paying attention*: When they learn that little new information is being presented or is being presented too slowly, they tune into their own private thoughts. Then they may actually miss key new information.
- *Achievement Gap:* There may be a gap between the student's performance and the student's capabilities. Ex. Olympic Athlete Gabby Douglas. Clearly talented in gymnastics. But she couldn't reach her potential in her hometown gym. She also couldn't reach her potential without a coach. So she traveled across the country to have her talents developed by an Olympic coach. (Gifted students do need your help; they do not learn best on their own.)

Reflection

Think over your list of students again. Take about 1 minute and consider: Do you see your students struggling with any of these issues? Which ones?

Why do these issues exist?

Discussion:

What barriers have you experienced in attempting to individualize education?
What students in your class do you pay the most attention to? Why?
Why do you think we offer periodic pullout instruction for lower ability students, but not to higher ability students? Should we offer that type of instruction to higher ability students?

Barriers

- *Classroom division by age*: This tradition may be rooted in the civil rights movement. When we discovered that minority race students were disproportionately found to be lower achievers, we worked to remove any hint that this trend might be related to racism. Division by age became the only acceptable and fair way to divide classrooms. Today that sensitivity to differences carries over as we see classes divided so that there are an equal number of genders, ethnicities, and abilities in each room. As a result we have very negative outlooks on retention and grade skipping. This division does not necessarily create the best environment for student achievement.
- *Accountability Legislation*: Teacher accountability for students' test scores has forced teachers to focus our attention primarily on the lowest achieving third of the class. This legislation has redefined success to mean grade level achievement rather than personal academic growth. (Therefore, schools are mostly satisfied with grade level achievement, and teachers are more willing to focus our attention on the lowest achieving third.)
- *Unavailable curriculum*: For students who are able to do work beyond their grade level, it can be difficult to access curriculum and materials appropriate for them. A separate middle school building may give our upper elementary students a curriculum ceiling.
- *Lack of training*: (In most of our teacher education programs we received little to no instruction on how to detect and accommodate for gifted children.)
- *Funding and Legislation*: "Gifted and Talented Children's Education Act of 1978" gave schools financial incentives to develop gifted and talented programs, but it was repealed. Now there is no legislation requiring services for gifted and talented students. However, there is grant money available from the state. Most grants are for about $20,000.

How Can We Better Serve Gifted and Talented Students?

Acceleration:

One way to ensure that gifted students are reaching their potential is by advancing them to more difficult course work. Research confirms that students who receive accelerated instruction outperform students with like IQ scores who do not receive accelerated instruction on achievement tests. Sometimes this is through skipping grades or attending one class period with a higher grade level. Having students work independently at their own pace is not good practice for acceleration. Gifted students still need a teacher.

Practical Ideas:

- Spelling tests: Students with 90% or higher on a pre-test work together to collect 10 new words from their textbooks, study the words together, and give each other a test over those words at the end of the week.
- Use curriculum materials from a variety of grade levels.

Enrichment:

Another way to help gifted students reach their potential is through enrichment. This type of activities allows students to explore topics in greater depth or to explore new subjects that aren't in the curriculum. In order to make room for this, teachers should compact the curriculum for gifted students by reducing the repetition of material or exercises to reinforce mastery. Research says that many teachers have success in compacting curriculum, but struggle to find appropriate enrichment activities to add.

Practical Ideas:

- Extend math skills to real world problems.
- Use their visual or performing art skills to deepen their understanding of themes in books.
- Stock the classroom with appropriate books and magazines that will introduce them to new concepts in their free time.
- Extend social studies study by including elements of the arts.

Like Ability Grouping

- Gifted students benefit from receiving instruction with peers of like ability. However, the instruction must be differentiated to their ability level. Actually, research shows that all students make substantial academic gains from receiving instruction adapted to their ability level with peers who have like ability.

Describe your perfect school day:

"A perfect school day would be that it would be a science day. We would study space, magnets, and computers." –Boy, 10, New York

"For a perfect day, all of the kids would be at school; the work would be challenged but fun; the lunch line would be short. At the end of the day I'd have no homework and the bus wouldn't be noisy." –Girl, 10, Michigan

What makes learning interesting and fun?

- Hands-on activities
- Brainstorming
- Writing stories
- Solving serious problems like how to make a town more hospitable

- Field trips
- Listen to recordings
- Watch a movie
- Experiments
- Reading and math games
- Research
- Drawing
- Classroom discussions
- Guest speakers
- Projects like voting on bills, having sales, or acting out a news report
- Unusual topics like archeology, calligraphy, or woodworking

Unit Matrix

- Planning a unit increases meaningful learning, because it makes cross-curricular connects and typically has real-world applications. This type of teaching is highly motivating for gifted students and is excellent teaching for all students.
- Using a matrix to plan will help you differentiate instruction for all ability levels, not just gifted and talented students.
- Begin with an outline of standards-based content. Enrich the content covered so that it is engaging and interesting for students. Design a performance-based objective for each level of thinking. Then decide which objectives are appropriate for each student. Choice is a motivator for learning, so you have a lot of freedom in that step. Based on these decisions, design lessons and centers to best equip the students to meet these objectives.
- Sometimes gifted students may benefit from being included in whole group lessons. Sometimes individual work on projects is best. Sometimes small groups might collaborate in centers.
- Concept-based units: Another way to choose the content of a unit is to organize it based on an overarching theme. Some themes might be: Astronomy, Chance, Citizenship, Courage, Emotion, Family, Good and Evil, Happiness, Justice, Language, Law, Love, Nature, Religion, Senses, Success and Failure or wealth. Choose content from each of the disciplines that relates to a theme.
- These unit plans should encompass all of the subjects. The next slides give mostly project ideas that would challenge and excite a gifted learner.

Differentiating Math Instruction

- Math instruction should be problem solving based and use real-world and inter-disciplinary applications, estimation, and mental math. Estimation and mental math require sophisticated number sense that we want to develop in gifted students.
- Other Ideas: math games, origami (geometric shapes), calculating distance on social studies maps, measuring paper for bulletin boards, converting metric and the English system in Science, perspective in art, latitude and longitude, drawing maps of their house/school/desk to scale, plan/budget a field trip/class party, etc.

Differentiating Language Arts Instruction

- Daily 5: This format for your reading instruction block works great with gifted students, because it is so easily personalized. Students may choose their activities like centers. They may read individually or with a partner any book they choose. Listening to a book on CD is also a choice. Stations that develop writing and vocabulary are easily individualized to match the skills or content that a group of students need addressed.
- Reading discussion group
- Young Author's. There are many other websites that allow students to submit poems and short stories to be published.

Differentiating Social Studies Instruction

- Sit in on meetings for the school board, courts, etc.
- Create your own government system to role play with
- Interview public officials
- Invite a government official to be a guest speaker
- Conduct opinion polls on public issues
- Create a citizenship club to study issues
- Candidates and political participation
- Field trips to historical sites
- Interview senior citizens
- Field trip to a cemetery

Differentiating Science Instruction

- Testing authentic questions
- Brainstorm hypotheses
- Create graphs and charts to share information
- Using authentic science equipment
- All sorts of experiments
- Professionals who apply science in their careers as guest speakers

Extra Curricular Opportunities

- Teachers can sponsor activities many of these activities. You can also help advocate for students by making them aware of opportunities that are available for their growth in the community.
- 4-H
- Math Bowl
- Spell Bowl
- Science Fair
- Student Council

- Talent Shows
- Summer Talent Search Programs

Other Helpful Resources

- NAGC Resources: This website includes journal articles, background knowledge on gifted education, and links to content resources.
- Exquisite Minds: This website is a collections of all types of resources including websites and games for kids, links for parents, and background information for educators.
- Everyday Mysteries: This website organizes a variety of curious science questions into categories. After a brief answer to the question it lists several websites and books for further discovery. This would be a great tool for research.
- Exploratorium: This website has some resources for educators. Under the Explore tab, it includes a wide variety of specific science topics that students would be interested in such as skateboard science and microscopes. Under each topic there is a website constructed to guide the students in engaging with that topic. It is much higher level thinking than other websites.
- Science News for Kids: This website includes up to date information about new research, technologies and other developments across different science areas. The articles vary in length and include key vocabulary and definitions at the end of the article. Each article is accompanied by high definition photography.

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